NCERT Syllabus for Class 12 2023 (All Subjects) - Download PDF Here

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National Council of Educational Research and Training (NCERT) has provided the NCERT syllabus for class 12 Science, Arts, and Commerce stream. NCERT Syllabus for Class 12 PDF is available to download from the official website, ncert.nic.in. The NCERT syllabus gives an outline of the curriculum and contents of each subject including Physics, Chemistry, Biology, Mathematics, etc.

The NCERT 12th Class syllabus contains detailed information on each subject such as unit wise topics of each chapter along with the marks distribution. Students can check all the important topics from the syllabus. The syllabus for some subjects is segregated into theory and practicals, whereas for some subjects there will be a theory paper only. Check the detailed NCERT syllabus for Class 12 on this page.

NCERT Class 12 Syllabus PDF Download

Subjects	Links
NCERT 12th syllabus for English	Click here
NCERT 12th syllabus for Maths (Revised)	Click here
NCERT 12th syllabus for Physics (Revised)	Click here
NCERT 12th syllabus for Chemistry (Revised)	Click here
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NCERT Syllabus for Class 12 English

The theory paper of English is of 100 marks. The question paper is divided into three sections: Reading, Writing, and Literature. The exam duration will be 3 hours. There are two books prescribed in the NCERT syllabus for class 12 Flamingo, and Vistas (Supplementary reader). Below is the list of chapters included in both books.

NCERT Syllabus for Class 12 for English - (Flamingo)

Prose	Poetry
The Last Lesson	My Mother at Sixty Six
Lost Spring	Keeping Quiet
Deep Water	A Thing of Beauty
The Rattrap	A Roadside Stand
Indigo	Aunt Jennifer's Tigers
Poets and Pancakes	
The Interview (Part I & II)	
Going Places	

NCERT Syllabus for Class 12 English - Vistas

1. The Third Level
2. The Tiger King
3. Journey to the End of the Earth
4. The Enemy
5. On the Face of It

6. Memories of childhood: The c

NCERT Syllabus for Class 12 Physics

The syllabus of NCERT Physics for class 12 is divided into theory and practical. The theory exam is 70 marks and the practical exam is of 30 marks. Students must go through the complete NCERT Physics syllabus for 12th to have a basic idea about the curriculum. Refer to the tables below to know the NCERT syllabus for 12th Physics Theory and Practicals.

NCERT Syllabus for Class 12 - Physics (Theory)

Unit	NCERT Chapter-wise Solution	Important Topics	Marks
I	**Electrostatics**		17
	Chapter-1: Electric Charges and Fields	Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; torque on a dipole in uniform electric field, super position principle and continuous charge distribution. Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole,etc.	

	Chapter-2: Electrostatic Potential and Capacitance	Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, Conductors and insulators, free charges and bound charges inside a conductor, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field, etc.
II	**Current Electricity**	

	Chapter-3: Current Electricity	Ohm's law, electrical resistance, V-I characteristics (linear and non-linear) Carbon resistors, Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current , electrical energy and power, electrical resistivity and conductivity, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance,etc	
III	**Magnetic Effect of Current & Magnetism**		

	Chapter-4: Moving Charges and Magnetism	Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields, Cyclotron.Ampere's law and its applications to infinitely long straight wire, etc.

	Chapter-5: Magnetism and Matter	Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a revolving electron, magnetic field lines; earth's magnetic field and magnetic elements, magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, etc
IV	**Electromagnetic Induction & Alternating Current**	
	Chapter-6: Electromagnetic Induction	Electromagnetic induction; Lenz's Law, Eddy currents. Self and mutual induction. Faraday's laws, induced EMF and current.

	Chapter-7: Alternating Current	Alternating currents, peak and RMS value of alternating current/ voltage; reactance and impedance; power factor, wattless current, LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, etc	
V	**Electromagnetic Waves**		
	Chapter-8: Electromagnetic Waves	Basic idea of displacement current, Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only), etc	17
VI	**Optics**		

	Chapter-9: Ray Optics and Optical Instruments	Power of a lens, combination of thin lenses in contact, refraction of light through a prism. Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibers, etc
	Chapter-10: Wave Optics	Young's double slit experiment and expression for fringe width, Wave front and Huygen's principle, Proof of laws of reflection and refraction using Huygen's principle, coherent sources and sustained interference of light, diffraction due to a single slit, reflection and refraction of plane wave at a plane surface using wave fronts. Interference, etc.
VII	**Dual Nature of Matter**	

	Chapter-11: Dual Nature of Radiation and Matter	Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light, etc.
VIII	**Atoms & Nuclei**	
	Chapter-12: Atoms	Alpha-particle scattering experiment; Bohr model, energy levels, hydrogen spectrum, Rutherford's model of atom.
	Chapter-13: Nuclei	Composition and size of nucleus, Radioactivity, alpha, beta and gamma particles/ rays and their properties; radioactive decay law, etc.
IX	**Electronic Devices**	

	Chapter-14: Semiconductor Electronics	Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier, Energy bands in conductors, semiconductors and insulators (qualitative ideas only), etc.	
X	**Communication Systems**		
	Chapter-15: Communication Systems		
	Total		**70**

NCERT Syllabus for Class 12 - Physics (Practicals)

Particulars	**Marks**
Two experiments one from each section	8+8
Practical record (experiments and activities)	6
Investigatory Project	3
Viva on experiments, activities and project	5
Total	30

NCERT Syllabus for Class 12 Maths

The mathematics syllabus of 12th NCERT is segregated into theory and internal assessment. The question paper of NCERT is 80 marks, wherein the internal assessment will be of 20 marks. The questions asked in the examination will be very short, short, and long answer types. Check the NCERT syllabus for class 12 for mathematics from the table below.

NCERT Syllabus for Class 12 - Mathematics

NCERT Chapter-wise Solution	Important Topics	Marks
Chapter 1 - Relations and Functions	Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions	08
Chapter 2 - Inverse Trigonometric Functions	Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions	
Chapter 3 - Matrices	Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Oncommutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries)	10
Chapter 4 - Determinants	Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.	

Chapter 5 - Continuity and Differentiability	Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, 𝐝𝐞𝐫𝐢𝐯𝐚𝐭𝐢𝐯𝐞 sin−1 𝐱 , cos−1 𝐱 and tan−1 𝐱, derivative of implicit functions. Concept of exponential and logarithmic functions. Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives	
Chapter 6 - Application of Derivatives	Applications of derivatives: rate of change of bodies, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as reallife situations)	
Chapter 7 - Integrals	Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them. ∫ dx x 2 ± a 2, ∫ dx √x 2 ± a 2 , ∫ dx √a 2 − x 2 , ∫ dx ax2 + bx + c , ∫ dx √ax2+bx+c ∫ px + q ax2 + bx + c dx, ∫ px + q √ax2+bx + c dx, ∫ √a 2 ± x 2 dx, ∫ √x 2 − a 2 dx ∫√𝐝𝐞2 + 𝐝𝐟 + 𝐠 𝐝𝐱, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals	35
Chapter 8 - Application of Integrals	Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only)	

Chapter 9 - Differential Equations	Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type: dy dx + py = q, where p and q are functions of x or constants. d□ d□ + px = q, where p and q are functions of y or constants.	
Chapter 10 - Vectors	Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.	14
Chapter 11 - Three Dimensional Geometry	Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.	

Chapter 12 - Linear Programming	Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).	05
Chapter 13 - Probability	Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.	08
Total		80

NCERT syllabus for class 12 Chemistry

The details for the Theory and practical syllabus of NCERT 12th chemistry is given in the table below. Students can check the unit wise important topics and marks allotted for each unit here. The evaluation scheme for the chemistry practical examination is given in the second table.

NCERT Syllabus for Class 12 - Chemistry

Chapters	Important Topics	Marks
Solid State	• General characteristics of solid states • Amorphous and crystalline solids • Classification of crystalline solids • Molecular solids, etc.	23
Solutions	• Types of solutions • Expressing concentration of solutions • Solubility, solubility of a gas in liquid, etc.	

Electrochemistry	• Electrochemical cells • Galvanic cells • Measurement of electrode potential • Nernst equation, etc.	
Chemical Kinetics	• Rate of a chemical reaction • Dependence of rate on concentration • Rate expression and rate constant, etc.	
Surface Chemistry	• Adsorption • Distinction between adsorption and absorption • Types of adsorption etc	
General Principles and Processes of Isolation of Elements	• Occurence of metals • Extraction of crude metal from concentrated ore, • Thermodynamic principles of metallurgy, etc.	19
The p-Block elements	• Occurrence • Electronic configuration • Atomic and ionic radii • IIonisation Enthalpy • Electronegativity, etc.	
The d- and f - Block Elements	• Electronic Configurations of the d-Block Elements • Variation in Atomic and Ionic Sizes of Transition Metals, etc.	
Coordination Compounds	• Werner's theory of coordination compounds • Definitions of Some Important Terms Pertaining to Coordination Compounds, etc.	
Haloalkanes and Haloarenes	• Nature of C-X Bond • Methods of preparation of haloalkanes, hydrocarbons, halogen exchange, etc.	28

Alcohols, Phenols and Ethers	• Alcohols— Mono, Di, Tri or Polyhydric alcohols, • Phenols— Mono, Di and trihydric phenols etc	
Aldehydes, Ketones and Carboxylic Acids	• Nomenclature, structure of the carbonyl group • Preparation of Aldehydes and Ketones etc.	
Amines	• Structure of amines • Hoffmann bromamide degradation reaction • Gabriel phthalimide synthesis, etc	
Biomolecules	• Carbohydrates, Monosaccharides, • Preparation of Glucose, structure of glucose • Cyclic Structure of Glucose, etc.	
Polymers	• Classification of Polymers • Types of polymerization reactions • Mechanism of polymerisation reaction, etc.	
Chemistry in Everyday Life	• Drugs and their classification • Drug-target interaction • Receptors as drug targets	
Total		70

NCERT Syllabus for Class 12 - Chemistry Practical

Practicals	**Marks**
Volumetric Analysis	8
Salt Analysis	8
Content-based Experiment	6

Project Work	4
Class record and viva	4
Total	30

NCERT syllabus for class 12 Biology

The NCERT Syllabus of Biology class 12 comprises theory and practical exam. The total marks for Biology subject is 100, where the theory exam is 70 marks and practicals are of 30 marks. Check the important topics and marking scheme below.

NCERT Syllabus for Class 12 - Biology (Theory)

NCERT Chapter-wise Solution	Important Topics
Chapter 1 - Reproduction in organisms	Modes of Reproduction - Asexual and Sexual Reproduction; Reproduction; asexual reproduction- Binary fission, Sporulation, Budding, Gemmule formation, etc.
Chapter 2 - Sexual Reproduction in Flowering Plants	Flower Structure; Development of male and female gametophytes; pollination -Types, agencies and examples; outbreeding devices; post-fertilization events - development of endosperm and embryo, pollen-pistil interaction; double fertilization, etc.
Chapter 3 - Human Reproduction	Embryo development up to blastocyst formation, menstrual cycle, fertilisation, Male and Female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis, etc.
Chapter 4 - Reproductive Health	Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - contraception and medical termination of pregnancy, need and methods, etc.

Chapter 5 - Principles of Inheritance And Variation	Chromosome theory of inheritance; linkage and crossing over; sex-linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans, Mendelian inheritance; deviations from Mendelism – incomplete dominance, codominance, multiple alleles and inheritance, pleiotropy; elementary idea of polygenic inheritance, etc.
Chapter 6 - Molecular Basis of Inheritance	Central dogma; transcription, genetic code, translation; gene expression and regulation - lac operon, Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication, etc.
Chapter 7 - Evolution	Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution, Origin of life; biological evolution and evidence for biological evolution (palaeontology, comparative anatomy, embryology and molecular evidence), etc.
Chapter 8 - Human Health and Disease	Pathogens; parasites causing human diseases (malaria, dengue, common cold, amoebiasis, ringworm) and their control, chikungunya, filariasis, ascariasis, typhoid, pneumonia, etc.
Chapter 9 - Strategies for Enhancement in Food Production	Improvement in food production: Plant breeding, Biofortification, Apiculture, tissue culture, single cell protein, etc.
Chapter 10 - Microbes in Human Welfare	Energy generation and microbes as bio-control agents and bio-fertilizers, In household food processing, industrial production, sewage treatment, etc.
Chapter 11 - Biotechnology: Principles and Processes	Genetic Engineering (Recombinant DNA Technology).

Chapter 12 - Biotechnology and its Applications	Stem cell technology, gene therapy; genetically modified organisms, Application of biotechnology in health and agriculture: Human insulin and vaccine production, etc.
Chapter 13 - Organisms And Population	Population and ecological adaptations; population interactions - mutualism, Organisms and environment: Habitat and niche, competition, predation, parasitism, etc.
Chapter 14 - Ecosystem	Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession, etc.
Chapter 15 - Biodiversity and Conservation	Biodiversity conservation; hotspots, endangered organisms, extinction, Biodiversity-Concept, patterns, importance; loss of biodiversity, etc.
Chapter 16 - Environmental Issues	Agrochemicals and their effects; solid waste management; radioactive waste management; greenhouse effect and climate change impact and mitigation; ozone layer depletion, Air pollution and its control; water pollution and its control, etc.
Total	

Also read,

- NCERT solutions for Class 12
- NCERT Exemplar Class 12 Solutions

NCERT Syllabus for Class 12 - Biology (Practicals)

Particulars	Marks
One Major Experiment	5

One Minor Experiment	4
Slide Preparation	5
Spotting	7
Practical Record/Project record + Viva Voce	4
Investigatory Project and its Project Record + Viva Voce	5
Total	30

NCERT Books for class 12 all Subjects

- NCERT Book for Class 12 English
- NCERT Book for class 12 Physics
- NCERT Book for Class 12 Maths
- NCERT Books for class 12 Chemistry
- NCERT Books for class 12 Biology
- NCERT Book for class 12 Hindi

Frequently Asked Question (FAQs) - NCERT Syllabus for Class 12 2023 (All Subjects) - Download PDF Here

Question: Is NCERT enough for the preparation of competitive examinations?

Answer:

NCERT is enough for understanding the concepts. For practice purpose you may to refer to other books as well.

Question: What is the ideal time to revise for CBSE class 12?

Answer:

Ideally you have to start your revision at least two months before the examination.

Question: What are the passing marks in CBSE class 12?

Answer:

Passing marks in CBSE class 12 are 33%.

Question: Is CBSE and NCERT different?

Answer:

CBSE is a board whereas NCERT is a counsel. CBSE prescribes the books published by NCERT.
